No. 200400004

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Hollar Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PUMPKIN

'Full Moon'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this eleventh day of March, in the year two thousand and five.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Hollar Seed Company

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
Full Moon

3. VARIETY NAME
Full Moon

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
PO Box 106
Rocky Ford, CO ~~81067~~ 81067

5. TELEPHONE *(include area code)*
530-458-2276

6. FAX *(include area code)*
530-458-2177

FOR OFFICIAL USE ONLY

PVPO NUMBER
2004 0004

FILING DATE
October 3, 2003

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Colorado

9. DATE OF INCORPORATION
11/19/1957
~~1950~~

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
Jim Hollar/Hollar Seeds, VPRD
3303 Ranch Rd., Colusa, CA 95932

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 3652.00
DATE 10/3/2003

CERTIFICATION FEE:
$ 432 + 38
DATE 10/5/04

11. TELEPHONE *(include area code)*
530-458-2276

12. FAX *(include area code)*
530-458-2177

13. E-MAIL
jimhollar@frontiernet.net

14. CROP KIND *(Common Name)*
Pumpkin

16. FAMILY NAME *(Botanical)*
Cucurbitaceae

15. GENUS AND SPECIES NAME OF CROP
Cucurbita Maxima

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? ***(OPTIONAL)***
☐ YES ☒ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
(Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 21 and 22 below)* ☒ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☐ YES ☒ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☐ YES ☒ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Jim Hollar (For Hollar Seeds)			
NAME *(Please print or type)*		NAME *(Please print or type)*	
Jim Hollar		Larry Hollar	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
VP R. & D.	9-25-03	President	9.19.03

JMS 4/19/04

JMS 4/19/04

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INSTRUCTIONS

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GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $3,652 ($432 filing fee and $3,220 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvpo/pvp.htm

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

N/A

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

N/A

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

N/A

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

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DRAFT Exhibit A Form

1. Describe the genealogy (back to and including public and commercial varieties, lines, or clones used) and the breeding method(s).

Full Moon was found in a 10 acre field of Big Max (orange), in 1998. Full Moon is an albino mutation. It looks like Big Max plant and fruit in all respects except color. Breeding method was self pollenation as described in Exhibit "C", item 18.

2. Give the details of subsequent stages of selection and multiplication.

Year	Detail of Stage	Selection Criteria
	Please see Exhibit "C", Item 18 (comments)	

3a. Is the variety uniform? X Yes ____ No In addition to Uniformity of White Color, Plant size | Habit Fruit size & Shape, and all Major plant & Fruit characters were Uniform in the generations in this Work enough

How did you test for uniformity?

We grew 480 seeds from S3 generation. The 480 plants were 100% white. A subsequent generation, S4, was also 100% white. Two following Open Pollenated generations were 100% white. Please see attached addendum to exhibit A

3b. Is the variety stable? X Yes ____ No

How did you test for stability? Over how many generations?

Stability tested by observing 100% white color of fruits over 4 successive generations.

4. Are genetic variants observed or expected during reproduction and multiplication? X Yes ____ No

If yes, state how these variants may be identified, their type and frequency. Less than 5% of fruits have small warts on the fruit exterior. They are a slightly raised bump, 1/2-1" diameter, 1/8-5/16" high. The warts are same color white as exterior of Full Moon. Big Max also has the same warts, orange, as Big Max fruit exterior. In same ratio as Full Moon.

Continue on additional pages if necessary.

Addendum to Exhibit A

(Hollar, Full Moon application)

3a. The variety is uniform.

480 plants of the S3 generation were 100% white. Plants were all uniform in terms of pant size, leaf size, leaf shape. Fruits were uniform for shape, suture, flesh color, and seed size and shape. The 480 plants were alike in all respects.

389 plants of the S4 generation, were uniform and stable in all characteristics, as the above S3 generation; all white, plants uniform, fruits uniform in all characteristics.

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DRAFT Exhibit B Form

Based on overall morphology, Full Moon is most similar to Lumina.
Applicant's new variety *Most similar comparison variety(ies)*

Full Moon most clearly differs from Lumina in the following traits:
Applicant's new variety *Most similar comparison variety(ies)*

Name the specific trait, then list the value of that trait for each variety in the comparison. Attach appropriate supporting evidence (see the Guidelines for Presenting Evidence in Support of Variety Distinctness, available from the PVP Office or website).

1. Qualitative traits: *(Eg. Leaf Pubescence*	Applicant's New Variety _____ *heavy pubescence*	1st Comparison Variety _____ *glabrous*	Evidence *photograph attached)*
No significant	Full Moon difference	Lumina	
2. Color traits: *(Eg. Leaf Color* Fruit Color exterior	*Dark Green (5GY 3/4)* White Group 158 C	*Light Green (2.5GY 8/10)* White group 155 D	*Munsell Color Chart)*
Flesh Color interior	Yellow-Orange Grp 20-A (above colors RHS	Yellow-Orange Grp 18-C Colour chart)	
3. Quantitative traits: *(Eg. Plant Height* Fruit Weight	*200 cm +/- 10 cm (N=25)* 71.99 # avg.	*250 cm +/- 15 cm (N=25)* 16.95 # avg	*statistics attached)* (statistical data attached)

g evidence.

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FRUIT WEIGHT STATISTICS OF FULL MOON AND LUMINA

(Hollar Seeds, 2002)

The new variety, Full Moon, was compared to the only existing similar variety, Lumina, during 2002's summer, and the experiment was conducted with the Completely Randomized Design (CRD) with two replications(Rep), each of which had 1000 plants. Thirty (n) fruits were randomly picked and weighed in each rep. *W* is used here to stand for the fruit weight (lb.):

Fruit Weight(*W*) (lb.)

I. Full Moon

Rep I: Data (*W*): 102 77 79 55 93 102 96 54 46 47 60 23 75 100 21 114 98
75 66 77 113 24 52 80 90 92 49 68 77 108

Mean (*I*): $\sum W$ /30 = 2213.00/30 = 73.77

Rep II: Data (*W*): 70 38 56 50 74 103 105 75 24 65 82 91 73 31 42 14 76
127 83 105 50 91 98 44 56 51 88 42 83 74

Mean (*II*): $\sum W$ /30 = 2061.00/30 = 68.70

Average Fruit Weight: ½[Mean (I) + Mean (II)] =1/2[73.77 + 68.70] = **71.24**

II. Lumina

Rep I: Data (*W*): 14 26 24 12 15 17 14 23 19 9 18 16 19 25 11 21 6 27
10 23 16 23 15 14 16 18 21 14 20 16

Mean (*I*): $\sum W$ /30 = 522.00/30 = 17.40

Rep II: Data (*W*): 17 15 16 27 15 23 23 13 17 13 25 14 20 12 17 15 8 9
12 22 24 14 18 17 20 16 22 8 15 18

Mean (*II*): $\sum W$ /30 = 505.00/30 = 16.83

Average Fruit Weight: ½[Mean (I) + Mean (II)] =1/2[17.40 + 16.83] = **17.12**

Conclusion The fruit weight of Full Moon is significantly different (Pr>F = 0.0022) from the existing variety Lumina (attached SAS analysis sheets), therefore, it can be concluded that the Full Moon is a new mutant.

FRUIT WEIGHT DATA ANALYSIS OF FULL MOON AND LUMINA

(Hollar Seeds, 2002)

```
Options ps=55 ls=80;
Title1 'Full Moon';
Data a;
Input Cult $ Rep $ Pltno frt1 frt2 frt3 frt4 frt5 frt6 frt7
    frt8 frt9 frt10 frt11 frt12 frt13 frt14 frt15 frt16 frt17
    frt18 frt19 frt20 frt21 frt22 frt23 frt24 frt25 frt26
    frt27 frt28 frt29 frt30;
  M = (frt1+frt2+frt3+frt4+frt5+frt6+frt7+frt8+frt9+frt10+
    frt11+frt12+frt13+frt14+frt15+frt16+frt17+frt18+frt19
    +frt20+frt21+frt22+frt23+frt24+frt25+frt26+frt27+frt28
    +frt29+frt30)/pltno;
  output;
  Label Cult='variety'
  Rep='Replication'
  Pltno='No of plants';
Cards;
FM a 30 102 77 79 55 93 102 96 54 46 47 60 23 75 100 21 114 98
   75 66 77 113 24 52 80 90 92 49 68 77 108
FM b 30 70 38 56 50 74 103 105 75 24 65 82 91 73 31 42 14 76
   127 83 105 50 91 98 44 56 51 88 42 83 74
Lum a 30 14 26 24 12 15 17 14 23 19 9 18 16 19 25 11 21 6 27
   10 23 16 23 15 14 16 18 21 14 20 16
Lum b 30 17 15 16 27 15 23 23 13 17 13 25 14 20 12 17 15 8 9
   12 22 24 14 18 17 20 16 22 8 15 18
Proc print;
run;
Title2 'Analysis of Replicated Cultivars';
Proc ANOVA data = a;
Class Cult Rep;
Model M=Cult;
Means cult/ Duncan;
run;
```

2002 Data

OBS	CULT	REP	PLTNO	FRT1	FRT2	FRT3	FRT4	FRT5	FRT6	FRT7	FRT8	FRT9	FRT10
1	FM	a	30	102	77	79	55	93	102	96	54	46	47
2	FM	b	30	70	38	56	50	74	103	105	75	24	65
3	Lum	a	30	14	26	24	12	15	17	14	23	19	9
4	Lum	b	30	17	15	16	27	15	23	23	13	17	13

OBS	FRT11	FRT12	FRT13	FRT14	FRT15	FRT16	FRT17	FRT18	FRT19	FRT20	FRT21
1	60	23	75	100	21	114	98	75	66	77	113
2	82	91	73	31	42	14	76	127	83	105	50
3	18	16	19	25	11	21	6	27	10	23	16
4	25	14	20	12	17	15	8	9	12	22	24

OBS	FRT22	FRT23	FRT24	FRT25	FRT26	FRT27	FRT28	FRT29	FRT30	M
1	24	52	80	90	92	49	68	77	108	73.7667
2	91	98	44	56	51	88	42	83	74	68.7000
3	23	15	14	16	18	21	14	20	16	17.4000
4	14	18	17	20	16	22	8	15	18	16.8333

Analysis of Variance Procedure

Class Level Information

Class	Levels	Values
CULT	2	FM Lum
REP	2	a b

Number of observations in data set = 4

Dependent Variable: M

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2928.613611	2928.613611	450.69	0.0022
Error	2	12.996111	6.498056		
Corrected Total	3	2941.609722			

R-Square	C.V.	Root MSE	M Mean
0.995582	5.770523	2.549128	44.1750000

2002 Data

Dependent Variable: M

Source	DF	Anova SS	Mean Square	F Value	Pr > F
CULT	1	2928.613611	2928.613611	450.69	0.0022

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: M

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 2 MSE= 6.498056

Number of Means 2
Critical Range 10.97

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	CULT
A	71.233	2	**FM (Full Moon)**
B	17.117	2	**Lum (Lumina)**

Full Moon and Lumina are significantly different (Pr > F = 0.0022).

2003 Data

20040006

STATISTICS OF FRUIT WEIGHT

During 2003's summer, the experiment was conducted with the Completely Randomized Design (CRD) with two replications(Rep), each of which had 4000 plants. Thirty (n) fruits were randomly picked and weighed in each rep. *W* is used here to stand for the fruit weight (lb.):

Fruit Weight(*W*) (lb.)

I. Full Moon

Rep I: Data (*W*): 40 51 101 76 62 90 30 15 130 110 92 46 53 89 51 85 70 40 75 86 25 110 76 55 67 103 78 82 91 49

Mean (*I*): $\sum W /30 = 2128.00/30 = 70.93$

Rep II: Data (*W*): 61 98 43 61 73 25 103 78 49 91 82 101 76 113 99 25 46 55 66 89 101 76 85 57 76 55 67 76 110 86

Mean (*II*): $\sum W /30 = 2222.00/30 = 74.07$

Average Fruit Weight: ½[Mean (I) + Mean (II)] =1/2[70.93 + 74.07] = **72.52**

II. Lumina

Rep I: Data (*W*): 10 12 20 25 18 16 12 18 16 9 23 15 18 17 24 11 9 17 18 15 18 17 23 9 6 27 14 18 21 11

Mean (*I*): $\sum W /30 = 487.00/30 = 16.23$

Rep II: Data (*W*): 16 20 19 26 22 11 21 14 18 27 21 17 16 13 17 10 9 8 20 17 21 12 13 25 15 18 15 18 17 23

Mean (*II*): $\sum W /30 = 519.00/30 = 17.30$

Average Fruit Weight: ½[Mean (I) + Mean (II)] =1/2[16.23 + 17.30] = **16.77**

Conclusion Based on the result of the fruit weight data analysis (attached analysis sheets), it can be concluded that Full Moon is significantly different from Lumina.

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Full Moon and Lumina Data Analysis

(Hollar Seeds, 2003)

```
Options ps=55 ls=80;
Title1 'Full Moon';
Data a;
Input Cult $ Rep $ Pltno frt1 frt2 frt3 frt4 frt5 frt6 frt7
    frt8 frt9 frt10 frt11 frt12 frt13 frt14 frt15 frt16 frt17
    frt18 frt19 frt20 frt21 frt22 frt23 frt24 frt25 frt26
    frt27 frt28 frt29 frt30;
  M = (frt1+frt2+frt3+frt4+frt5+frt6+frt7+frt8+frt9+frt10+
    frt11+frt12+frt13+frt14+frt15+frt16+frt17+frt18+frt19
    +frt20+frt21+frt22+frt23+frt24+frt25+frt26+frt27+frt28
    +frt29+frt30)/pltno;
  output;
  Label Cult='variety'
  Rep='Replication'
  Pltno='No of plants';
Cards;
FM a 30 40 51 101 76 62 90 30 15 130 110 92 46 53 89 51 85 70
   40 75 86 25 110 76 55 67 103 78 82 91 49
FM b 30 61 98 43 61 73 25 103 78 49 91 82 101 76 113 99 25 46
   55 66 89 101 76 85 57 76 55 67 76 110 86
Lum a 30 10 12 20 25 18 16 12 18 16 9 23 15 18 17 24 11 9 17
   18 15 18 17 23 9 6 27 14 18 21 11
Lum b 30 16 20 19 26 22 11 21 14 18 27 21 17 16 13 17 10 9 8 20
   17 21 12 13 25 15 18 15 18 17 23
Proc print;
run;
Title2 'Analysis of Replicated Cultivars';
Proc ANOVA data = a;
Class Cult Rep;
Model M=Cult;
Means cult/ Duncan;
run;
```

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2003 Data

Full Moon 2

OBS	CULT	REP	PLTNO	FRT1	FRT2	FRT3	FRT4	FRT5	FRT6	FRT7	FRT8	FRT9	FRT10
1	FM	a	30	40	51	101	76	62	90	30	15	130	110
2	FM	b	30	61	98	43	61	73	25	103	78	49	91
3	Lum	a	30	10	12	20	25	18	16	12	18	16	9
4	Lum	b	30	16	20	19	26	22	11	21	14	18	27

OBS	FRT11	FRT12	FRT13	FRT14	FRT15	FRT16	FRT17	FRT18	FRT19	FRT20	FRT21
1	92	46	53	89	51	85	70	40	75	86	25
2	82	101	76	113	99	25	46	55	66	89	101
3	23	15	18	17	24	11	9	17	18	15	18
4	21	17	16	13	17	10	9	8	20	17	21

OBS	FRT22	FRT23	FRT24	FRT25	FRT26	FRT27	FRT28	FRT29	FRT30	M
1	110	76	55	67	103	78	82	91	49	70.9333
2	76	85	57	76	55	67	76	110	86	74.1000
3	17	23	9	6	27	14	18	21	11	16.2333
4	12	13	25	15	18	15	18	17	23	17.3000

Full Moon
Analysis of Replicated Cultivars
Analysis of Variance Procedure
Class Level Information

Class	Levels	Values
CULT	2	FM Lum
REP	2	a b

Number of observations in data set = 4

Analysis of Variance Procedure
Dependent Variable: M

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	3108.062500	3108.062500	1113.45	0.0009
Error	2	5.582778	2.791389		
Corrected Total	3	3113.645278			

R-Square	C.V.	Root MSE	M Mean
0.998207	3.742569	1.670745	44.6416667

12

20040004

2003 Data

3

Analysis of Variance Procedure
Dependent Variable: M

Source	DF	Anova SS	Mean Square	F Value	Pr > F
CULT	1	3108.062500	3108.062500	1113.45	0.0009

Analysis of Variance Procedure
Duncan's Multiple Range Test for variable: M

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 2 MSE= 2.791389

Number of Means 2
Critical Range 7.189

Means with the same letter are not significantly different.

Full Moon
Analysis of Variance Procedure

Duncan Grouping	Mean	N	CULT	
A	72.517	2	FM	**(Full Moon)**
B	16.767	2	Lum	**(Lumina)**

Exhibit C

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY
Pumpkin/Squash/Gourd (*Cucurbita* spp.)

NAME OF APPLICANT (S): Hollar Seeds

ADDRESS (Street and No. or RD No., City, State, and Zip Code):
PO Box 106
Rocky Ford, CO 81067

FOR OFFICIAL USE ONLY

PVPO NUMBER: 200400004

VARIETY NAME: Full Moon

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal characters typical to this variety in the boxes below. Place a zero in the first box (e.g., 089 or 09) when number is either 99 or less or 9 or less.

1. SPECIES:
[2] 1 = Lagenaria 2 = Maxima 3 = Mixta 4 = Moschata 5 = Pepo 6 = Other (Specify) _____

2. KIND: (According to use)
[1] 1 = Pumpkin 2 = Squash 3 = Gourd

3. TYPE:
[2] 1 = Summer (Vegetable Marrow) 2 = Winter (Boston Marrow)

4. COTYLEDON:
[350] mm Long [200] mm Wide

[2] Apex: 1 = Tapered 2 = Rounded 3 = Notched [2] Veining: 1 = Obscure 2 = Plainly Visible 3 = Prominent

[1] 1 = Light Green 2 = Gray-Green 3 = Medium Green 4 = Dark Green

5. PLANT:
[3] 1 = Bush 2 = Semi-bush 3 = Long Vines [3] 1 = Pilose 2 = Prickly 3 = Glabrous

6. MAIN STEM:
[1] 1 = Round 2 = Angled [600] mm Diameter at Mid-Point of First Internode [300] cm Average Length

[15] Average Number of Internodes

7. LEAVES:
[2] Shape: 1 = Ovate 2 = Orbicular 3 = Reniform 4 = Retuse

[1] Margin: 1 = Entire 2 = Denticulate 3 = Dentate

[50] cm Wide [50] cm Long

[1] Shape: 1 = Not Lobed 2 = Shallow Lobed 3 = Deep Lobed

[1] Margin: 1 = Flat 2 = Frilled

[1] Surface: 1 = Smooth 2 = Blistered

7. LEAVES: (continued)

[1] Dorsal Surface:
[2] Ventral Surface
} 1 = Glabrous 2 = Soft Hairy 3 = Bristled

[3] 1 = Light Green 2 = Gray-Green 3 = Medium Green 4 = Dark Green

[1] 1 = Not Blotched 2 = Blotched with Gray

[5] cm Petiole Length

8a. FLOWER – Pistillate:

[1][6] cm Diameter [1] Ovary: 1 = Drum-like 2 = Turbinate 3 = Fusiform [35] Pedicel: cm Length

[2] Margin: 1 = Straight 2 = Curved [1] Margin: 1 = Plain 2 = Frilled [0][8] Sepals: mm Width [4][0] Sepals: mm Length

[3] Color: 1 = White 2 = Lemon Yellow 3 = Mid-Yellow 4 = Deep Yellow 5 = Orange

8b. FLOWER – Staminate:

[1][4] Sepals: mm Length [0][8] Sepals: mm Width [3][9] Pedicel: cm Length

[3] Color: 1 = White 2 = Lemon Yellow 3 = Mid-Yellow 4 = Deep Yellow 5 = Orange

9. FRUIT (Market Maturity):

[7][6] cm Length [6][1] cm Width (Stem end) [6][1] cm Width (Blossom end) [2][1][60] 32,654.66 gm Average Weight

[5] Shape According to Variety Type: 1 = Acorn 2 = Banana 3 = Buttercup 4 = Butternut 5 = Connecticut Field 6 = Crookneck 7 = Hubbard 8 = Scallop 9 = Straightneck 10 = Other (Specify) _____

[1] Apex:
[2] Base:
} 1 = Depressed 2 = Flattened 3 = Rounded 4 = Taper Pointed

[3] Ribs: 1 = None 2 = Inconspicuous 3 = Prominent

[2] Rib Furrows: 1 = Shallow 2 = Medium Deep [2] Rib Furrows: 1 = Narrow 2 = Medium Wide 3 = Wide

[3] Fruit Surface 1 = Smooth 2 = Fine Wrinkle 3 = Shallowly Wavy

[2] Warts: 1 = None 2 = Few 3 = Many [0][2] Blossom Scar Button 1 = Depressed 2 = Slightly Extended 3 = Raised Acorn

10. RIND:

[1][0] mm Thickness at Medial [2] 1 = Soft 2 = Hard 3 = Woody & Tough

[1] Color Pattern: 1 = Regular 2 = Irregular

Colors: (Select two when necessary, i.e. Grayish-Buff) [1][2][0][4]

01 = White 02 = Cream 03 = Yellow 04 = Buff 05 = Brown 06 = Bronze 07 = Green 08 = Orange
09 = Pink 10 = Red 11 = Blue 12 = Gray 13 = Black 14 = Other (Specify) _____

[0][2] [0][1] Self or Ground

Pattern:

[ ][ ]	[ ][ ]	Streaks
[ ][ ]	[ ][ ]	Stripes
[ ][ ]	[ ][ ]	Spots
[0][2]	[0][4]	Blotches

[ ] 1 = Not Specific
[ ] 2 = Stem End Half
[ ] 3 = Blossom End Half
[ ] 4 = Acorn or Torban

JMS 4/19/04

10. RIND:

Pattern: (continued)

[ ][ ] [ ][ ] Lace [ ] 5 = Other (Specify) none

[ ][ ] [ ][ ] Other (Specify) none

11. FLESH:

[7][0] Thickness: mm Blossom End [9][0] Thickness: mm Medial [7][0] Thickness: mm Stem End

[4] Texture: 1 = Fine 2 = Granular 3 = Lumpy 4 = Stringy [1] Texture: 1 = Soft 2 = Firm 3 = Brittle

[2] Texture: 1 = Dry 2 = Moist 3 = Juicy [2] Flavor: 1 = Insipid 2 = Slightly Sweet 3 = Sweet

[2] Quality: 1 = Inedible 2 = Good 3 = Excellent [0][3][0][8] Color: (Choose from rind colors above)

12. SEED CAVITY: (Sectioned Apex to Base)

[6][1] cm Length [3][9] cm Width

[1] Location: 1 = Conforms to Fruit Shape 2 = Near Apex 3 = Apex Only [1] Placental Tissue: 1 = Sparse 2 = Moderately Abundant 3 = Abundant [1] Center Core: 1 = Inconspicuous 2 = Prominent

13. FRUIT STALKS:

[1][0] cm Length [07] cm Diameter

[1] 1 = Round 2 = Irregular [1] 1 = Not Twisted 2 = Twisted 3 = Curved [2] 1 = Not Tapered 2 = Tapered [2] 1 = Straight 2 = Slightly Curved

[3] Texture: 1 = Soft 2 = Spongy 3 = Hard [1] Furrows: 1 = None 2 = Shallow 3 = Deep

[2] Surface: 1 = Smooth 2 = Rough 3 = Spiny [1] Attachment End: 1 = Not Expanded 2 = Slightly Expanded 3 = Expanded

[2] Detaches: 1 = Easily 2 = With Difficulty [1] Color: 1 = Light Green 2 = Medium Green 3 = Dark Green

14. SEEDS:

[2][5] mm Length [1][7] mm Width [0][6] mm Thickness

[1] Face Surface: 1 = Smooth 2 = Wrinkled 3 = Slightly Pitted 4 = Scaly 5 = Creased [2] Color: 1 = White 2 = Cream 3 = Buff 4 = Brown

[1] Luster: 1 = Dull 2 = Glossy [2] Margin: Straight 2 = Curved 3 = Twisted

[1] Margin: 1 = Rounded 2 = Wedge-like

[1] Separation from pulp: 1 = Easy 2 = Moderately Easy 3 = Difficult [23] gms per 100 Seeds

500 [ ] No. Seeds per Fruit [1] 1 = Normal 2 = Naked

15. DISEASE RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[1] Powdery Mildew [0] Cucumber Mosaic [0] Squash Mosaic

[0] Watermelon Mosaic [0] Other (Specify) _____

16. INSECT RESISTANCE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[1] Squash Bug [0] Squash Borer [0] Other (Specify) _____

17. INDICATE A VARIETY MOST CLOSELY RESEMBLING THAT SUBMITTED FOR EACH CHARACTER:

CHARACTER	VARIETY	CHARACTER	VARIETY
Plant Habit	Big Max	Fruit Shape	Big Max
Leaf Type	Big Max	Fruit Color	Lumina
Flower Type	Big Max	Culinary Type	Big Max

REFERENCES:

1. Currence, T. M. 1954. *Vegetable Crops Breeding*, Department of Horticulture, University of Minnesota.
2. Tapley, W.T., Enzie, W.D. and Van Eseltine, G. P., 1937. *Vegetables of New York: The Curcurbits 1 (4)*. J. B. Lyon Company, Albany, New York
3. USDA Farmess Bulletin No. 1086. 1969. *Growing Pumpkins and Squashes.*
4. Whitaker, T.W. and G. N. Davies. *Curcurbits.* Interscience Publications, Inc., New York, NY

Hollar Seeds, Full Moon

Exhibit C item 18

S1 1998- We discovered a mutant albino in a 10 acre field of Big Max (orange). This single plant was selfed in 1998.

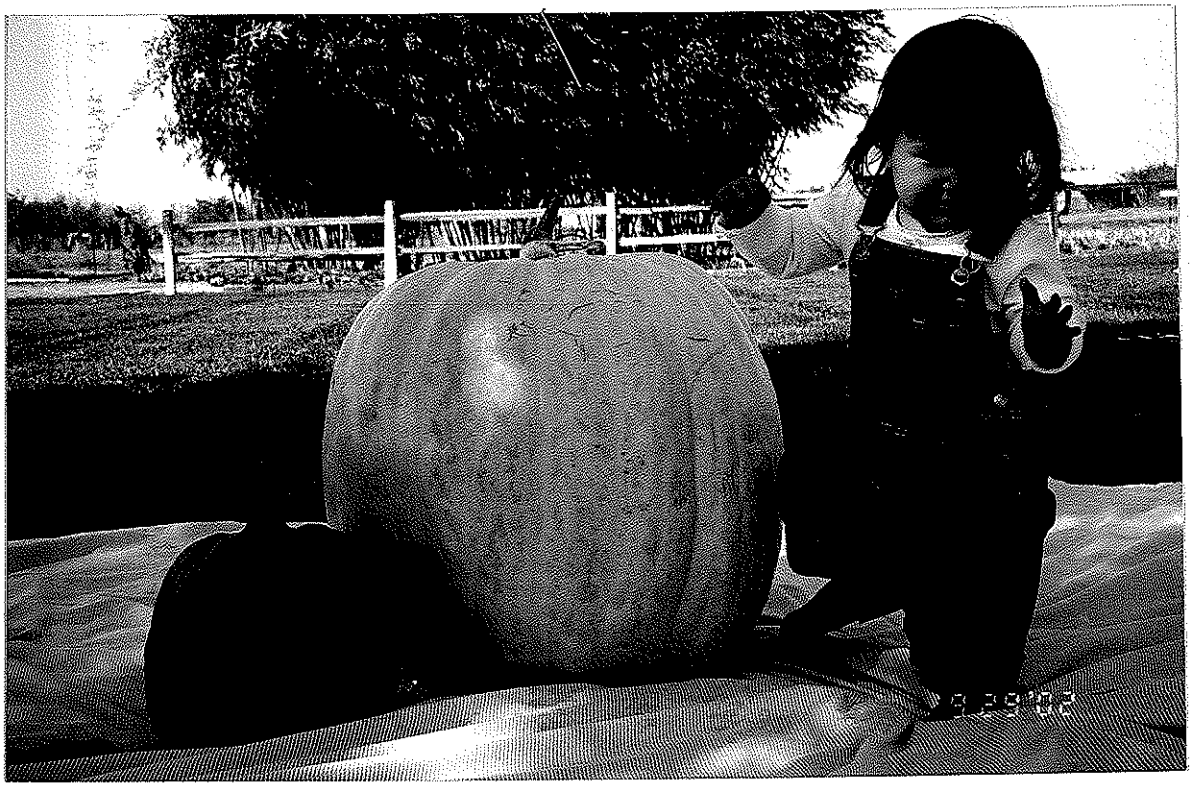
S2 1999- 320 plants were grown from the singel fruit that was selfed in 1998. 65% of these were "white big max" types. A single fruit was selected from within this 65%. It had been selfed and was selected to be most like Big Max in all characters except it was white.

S3 2000- 250 plants were grown from seed of single fruit selfed and selected in 1999. All these 250 plants were selfed. 100% of the 250 plants were white, and otherwise like Big Max in all characters. The best white selfes were selected and saved.

S4 2001- We planted seeds from 10 selected, selfed fruits. These were planted ear to row. There were 200 s. from each fruit planted (2000 s. planted). Each plant was selfed. Fruits from all of the 2000 plants were white, and otherwise like Big Max in size, shape, plant etc. The best 15 fruits were selected, and seeds saved from them.

OP1 2002- From above 15 selfed fruits, 4000 seeds were blended and planted. They were allowed to open pollenate. The resulting fruits were 100% white, and otherwise like Big Max.Saved 400# s.

OP2 2003- 8000 seeds from above 400# were blended and planted. They were allowed to open pollenate. All fruits were again 100% white, and otherwise like Big Max in all respects. From this planting we saved 665# seed.



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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Hollar Seed Company	Full Moon	Full Moon
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
PO Box 106 Rocky Ford, CO 81067	719-254-7411	719-254-3539
	7. PVPO NUMBER 200400004	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** [X] YES [ ] NO

10. Is the applicant the original owner? [X] YES [ ] NO **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
[X] YES [ ] NO **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
[X] YES [ ] NO **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

Initial, current, and entire ownership is with Hollar Seed Company, Rocky Ford, CO.

Jim Hollar, as employee of Hollar Seeds was the breeder, and has no private ownership in Full Moon

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.